REMARKS/ARGUMENTS

Prior to this communication, claims 1 – 3, 7, 8, 10 – 16, 20 – 24, 26, 28, 29, 32, 34 – 41, 45, 46, 48 – 54 and 56 – 58 are pending in the application. In the pending action, claims 1 – 3, 8, and 10 – 14 are allowed; and claims 15, 16, 20 – 24, 26, 28, 29, 32, 34 – 41, 45, 46, 48 – 54 and 56 – 58 are rejected. In response, Applicants have cancelled claims 26, 28, 29, 32, 34 – 38, and 53, 54, and 56-58; and amended claims 7, 15, 39, and 45. Applicants traverse the rejection of the cancelled claims and reserve the right to pursue the subject matter of the cancelled claims in the future, including in a continuation application, in the related CIP application, or in a RCE (if one results). Entry of this Amendment and reconsideration in view of the amendments and remarks contained herein are requested.

CLAIM REJECTIONS – 35 U.S.C. § 112

The Office rejected claims 53, 54, 56, and 57 under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants cancelled claims 53, 54, 56, and 57, thereby rendering the rejection moot. However, the Applicants do not concede to the rejections by canceling the claims, and reserve the right to pursue the cancelled claims in the future.

CLAIM REJECTIONS – 35 U.S.C. § 102

The Office rejected claims 7, 15, 16, 20, 22, 24, 39 – 41, 45, 46, 49, 51, 53, 54, 56 – 58 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Number 5,213,438 ("Miyazaki").

Claim 7

Claim 7 has been amended to depend from claim 1, and therefore, is allowable for at least the same reasons as set forth with respect to claim 1.

Independent claim 15

Claim 15 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Miyazaki. Particularly, the Office indicated that Miyazaki discloses a controller comprising a voltage input (2/6) to receive a first voltage (voltage from PS); a relay module (2/6) coupled to a voltage input

(input to 2) and to generate a second voltage; a controller (15 or Fig. 8:43) coupled to the module to receive the voltages and configured to generate a control signal; a second relay (16) coupled to the microcontroller to select an electric machine operating voltage and the frequency regulated voltage using the control signal; and a summing module (Fig. 1: summing node above 19, Fig. 2: node below 18) coupled to the voltage inputs to receive the first and second voltages and configured to generate different signals represents the receipt of the voltages." (Page 4 of the Pending Action.)

Applicants respectfully disagree. To prove a case of anticipation, the Office must show that the reference teaches every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. MPEP 706.02 (IV) and 2131.

Claim 15 is recited below:

A controller for an electric machine, the controller comprising:
a voltage input configured to receive a first voltage;
a relay module coupled to the voltage input, and configured to relay the first voltage and to generate a second voltage;
an inverter coupled to the relay module, and configured to be activated by the second voltage, and to generate a frequency-regulated voltage;
a module coupled to the relay module to receive the first voltage and the second voltage, and configured to generate different signals representing the first voltage and the second voltage;
a micro-controller coupled to the module to receive the different signals, and configured to generate a soft control signal based on the different signals;
a second relay coupled to the micro-controller, and configured to select an electric machine operating voltage from the first voltage and the frequency regulated voltage using the soft control signal.

Miyazaki discloses a controller 15 that receives an input $\Delta\omega$ from a node (above element 14) that generates a difference between an output ω^* of a rate circuit 14 and an output of a speed detector 7. (See Figure 1.) Particularly, Miyazaki discloses that "a speed controller 15 computes a torque current I_q^* which makes the speed difference $\Delta\omega$ between the speed [reference] ω^* obtained through a rate circuit 14 from a set speed ω_0^* set by a speed setting device 13 on the one hand, and the rotational speed ω of the induction motor 1 detected by the speed detector 7." (Col. 3, lines 24 – 31.) Therefore, Miyazaki does not teach or suggest "a micro-controller coupled to [a] module to receive [the] different signals [from the module], and configured to generate a soft control signal based on the different signals," as required by claim 15, even if Applicants were to construe switches 2/6 as the claimed relays. Applicants also note that the output ω^* of the rate circuit 14 and the output ω of the speed detector 7, which are fed

to the controller 15, are signals from the rate circuit 14 and the speed detector 7, but not from the switches 2/6.

Additionally, Miyazaki discloses a node (node above element 19 of Fig. 1) that subtracts an output (θ_v) of a voltage phase arithmetic unit 18 from another output (θ_p) of a transformer 9. Output ($\Delta\theta$) of the node is subsequently fed to a speed reference arithmetic unit 19. (See Figure 1) Miyazaki discloses that "the speed-reference arithmetic unit 19 computes a torque current reference I_{qa}* from the difference in phase $\Delta\theta$ between the motor-voltage phase θ_v and the power-supply-voltage phase θ_p and the torque current reference I_{qa}* is fed into the current-reference arithmetic unit 20." (Col. 3, lines 61 – 66.) Even if Applicants were to construe "a relay module (2/6) coupled to a voltage input (input to 2) and to generate a second voltage" as the claimed relay module, and the "second relay (16) coupled to the microcontroller to select an electric machine operating voltage and the frequency regulated voltage using the control signal" as the claimed second relay, the node above the speed-reference arithmetic unit 19 is not "configured to generate different signals representing the first voltage and the second voltage," the different signals to be provide to the microcontroller, as required by claim 15. That is, Miyazaki does not teach or suggest "a module coupled to the relay module to receive the first voltage and the second voltage, and configured to generate different signals representing the first voltage and the second voltage," as required by claim 15.

Miyazaki also discloses a node (Fig. 2: node below 18) that subtracts an output (θ_v) of a voltage phase arithmetic unit 18 from another output (θ_p) of a transformer 9. Output ($\Delta\theta$) of the node is subsequently fed to a switch 16. (See Figure 2.) Particularly, Miyazaki discloses that "the phase θ_p of the commercial power supply is detected and compared with the phase θ_v of the inverter output voltage obtained by the voltage-phase arithmetic unit 18 from the magnetic flux phase θ_0, thereby obtaining the phase difference $\Delta\theta$. In the case of the synchronous exchange, the switch 16 switches the input to the speed controller 15 from the difference in speed $\Delta\omega$ to the difference in voltage phase $\Delta\theta$." (Col. 5 lines 56 – 61.) Furthermore, Miyazaki also discloses that "the voltage phase difference $\Delta\theta = \theta_v - \theta_p$ is applied to the other fixed or stationary contact of the switch 16." (Col. 5, lines 45 – 47.) As remarked earlier, Miyazaki does not teach or suggest "a module coupled to the relay module to receive the first voltage and the second voltage, and configured to generate different signals representing the first voltage and the second voltage," as required by claim 15.

Accordingly, amended claim 15 contains patentable subject matter, and is allowable. Claims 16, 20 – 24 depend from claim 15. For at least the same reasons as set forth above with respect to claim 15, claims 16, 20 – 24 also contain patentable subject matter, and are therefore, allowable.

Independent claim 39

Amended claim 39 requires, among other things, "a module coupled to the first and second voltage inputs, the module configured to receive the first and second voltages and to generate different signals to represent the receipt of the first and second voltages," and "a micro-controller coupled to the module to receive the different signals, and configured to generate a soft control signal based on the different signals and to selectively control the coupling of one of the second voltage and the frequency regulated voltage to the motor with the soft control signal applied to the switch."

Miyazaki discloses a node (node above element 19 of Fig. 1) that subtracts an output (θ_v) of a voltage phase arithmetic unit 18 from another output (θ_p) of a transformer 9. Output ($\Delta\theta$) of the node is subsequently fed to a speed reference arithmetic unit 19. (See Figure 1.) Particularly, Miyazaki discloses that "the speed-reference arithmetic unit 19 computes a torque current reference I_{qa}* from the difference in phase $\Delta\theta$ between the motor-voltage phase θ_v and the power-supply-voltage phase θ_p and the torque current reference I_{qa}* is fed into the current-reference arithmetic unit 20." (Col. 3, lines 61 – 66.) Even if Applicants were to construe the "first voltage input coupled to one of the power inputs (PS)" as the claimed first voltage input and the "a second voltage input (PS)" as the claimed second voltage input, the node above the speed-reference arithmetic unit 19 does not "receive the first and second voltages," as required by claim 39. That is, Miyazaki does not teach or suggest a "module coupled to the first and second voltage inputs, the module configured to receive the first and second voltages and to generate different signals representing the receipt of the first and second voltages," as required by claim 39.

Similarly, Miyazaki discloses a node (Fig. 2: node below 18) that subtracts an output (θ_v) of a voltage phase arithmetic unit 18 from another output (θ_p) of a transformer 9. Output ($\Delta\theta$) of the node is subsequently fed to a switch 16. (See Figure 2.) Particularly, Miyazaki discloses that "the phase θ_p of the commercial power supply is detected and compared with the phase θ_v of the inverter output voltage obtained by the voltage-phase arithmetic unit 18 from the magnetic

flux phase θ_0, thereby obtaining the phase difference $\Delta\theta$. In the case of the synchronous exchange, the switch 16 switches the input to the speed controller 15 from the difference in speed $\Delta\omega$ to the difference in voltage phase $\Delta\theta$." (Col. 5 lines 56 – 61.) Furthermore, Miyazaki also discloses that "the voltage phase difference $\Delta\theta = \theta_v - \theta_p$ is applied to the other fixed or stationary contact of the switch 16." (Col. 5, lines 45 – 47.) As remarked earlier, Miyazaki does not teach or suggest "a module coupled to the first and second voltage inputs, the module configured to receive the first and second voltages and to generate different signals to represent the receipt of the first and second voltages," as required by claim 39.

Furthermore, Miyazaki discloses that the controller 15 receives an input $\Delta\omega$ from another node (above element 14) that generates a difference between an output ω^* of a rate circuit 14 and an output of a speed detector 7. (See Figure 1.) Particularly, Miyazaki discloses that "a speed controller 15 computes a torque current I_q^* which makes the speed difference $\Delta\omega$ between the speed [reference] ω^* obtained through a rate circuit 14 from a set speed ω_0^* set by a speed setting device 13 on the one hand, and the rotational speed ω of the induction motor 1 detected by the speed detector 7." (Col. 3, lines 24 – 31.) That is, even if Applicants were to construe the node above element 19 of Figure 1 (which has an output of the voltage phase difference $\Delta\theta$) as the claimed module, the controller 15 does not receive the output of the node. That is, Miyazaki does not teach or suggest a "micro-controller coupled to the module to receive the different signals," as required by claim 15.

Miyazaki also discloses that the controller 15 generates the torque current output I_q^* from the speed difference $\Delta\omega$. A switch 16 then receives either the torque current output I_q^* or the torque current difference I_{qa}^*. (See Figure 1.) Particularly, Miyazaki discloses that "the switch 16 selects the torque current reference I_q^* or I_{qa}^* depending upon a switching position and feed the selected reference to a current reference arithmetic unit 20." (Col. 3, lines 44 – 46.) The controller 15 therefore does not "selectively control the coupling of one of the first voltage and the frequency regulated voltage to the motor with the soft control signal applied to the switch," as required by claim 1. Therefore, Miyazaki does not teach or suggest a micro-controller that is "selectively control the coupling of one of the second voltage and the frequency regulated voltage to the motor with the soft control signal applied to the switch," as required by claim 39.

Similarly, Miyazaki also discloses that a speed controller 43 that generates the torque current output I_q^* from the speed difference $\Delta\omega$. A current reference arithmetic unit 45 then

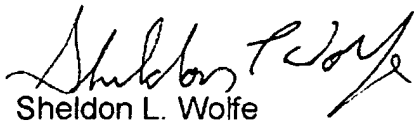
receives the torque current output I_q^*. (See Figure 8.) Particularly, Miyazaki discloses that "the difference $\Delta\omega$ (= ω^* + ω_a^* - ω) is applied to a speed controller 43 which in turn computes a torque current reference I_q^* which makes the difference $\Delta\omega$ zero." (Col. 8, lines 1 – 4.) That is, as remarked earlier, Miyazaki does not teach or suggest a "a micro-controller coupled to the module to receive the different signals, and configured to generate a soft control signal based on the different signals and to selectively control the coupling of one of the second voltage and the frequency regulated voltage to the motor with the soft control signal applied to the switch," as required by claim 39.

Claims 40, 41, 45, 46, and 48 – 52 either directly or indirectly depend from claim 39 For at least the same reasons as set forth above with respect to claim 39, claims 40, 41, 46, 48 – 52 also contain patentable subject matter, and are therefore, allowable.

CONCLUSION

Entry of the Amendment and allowance of the pending claims are respectfully requested. The undersigned is available for telephone consultation at any time during normal business hours.

Respectfully submitted,



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Docket No.: 010121-9911-00
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